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Inside...

Extended Crop Insurance for California Horticultural Crops

Recent federal legislation promoting crop insurance for U.S. farmers points to an expanding role for government-backed agricultural insurance programs in high-value California crops, especially fresh fruits and vegetables. Designing those particular programs for California conditions is a complex policy challenge. One important need is for economic analysis of potential payoffs, and on that score AIC-sponsored research has provided some preliminary information.

For an individual grower, unpredictable risks from weather, pests or fluctuating prices boil down to a single bottom-line risk—that of not maintaining a steady income. Crop insurance is one possibility for reducing that risk, but a grower must compare the chance of lost income to the cost of insurance.

In the major field crops (corn, wheat, cotton), insurance payoffs can be triggered effectively by a substantial loss in yield, which usually means less revenue. That's not so for California's fruit, tree-nut and vegetable growers, whose yields do not necessarily reflect revenue. Vegetable prices, particularly, can fluctuate dramatically during the harvest season and a grower's annual revenue may depend highly on the timing of harvest with market prices. That's one reason that the federally-backed crop insurance system now includes both yield insurance and revenue insurance.

Encouraging participation

The "Agricultural Risk Protection Act" passed by Congress in May increases the federal share of premiums paid for various levels of crop insurance coverage. Federal crop insurance programs were broadened in 1994 to include not only catastrophic yield-loss coverage (CAT) for the crops for which insurance was available, such as the major field crops, but also a basic assistance program for crops for which crop insurance was not previously available, such as many horticultural crops (Non-insured Assistance Program, or NAP). Participation in CAT and NAP has been high, since they are relatively inexpensive. However, the premiums for higher levels of coverage for horticultural crops, even with a government subsidy, are high enough to deter many growers, particularly in California. Last month's increase in government subsidy rates addressed that issue.

Nevertheless, participation by California growers has been increasing and has long been high for some crops (7,900 policies in 1995; 13,000 in 1999). In 1998, 80% of raisin growers purchased rain insurance. Almost half of prune growers, 35% of apricot growers and 35% of almond growers have purchased expanded insurance, but for other tree and nut crops participation is low. Current proposals include extending yield insurance and possibly revenue insurance to more fresh market crops in California. Last November, the federal Risk Management Agency announced that it was pursuing development of a pilot crop insurance program for fresh vegetables in California that would include a number of crops such as broccoli, cauliflower, celery and lettuce.

AIC research and outreach

UCD Agricultural Economist Hyunok Lee presented a review of risk management issues for horticultural crops and some preliminary research results at a workshop organized by the Western Growers Association. This workshop for horticultural crop producers and industry representatives focused on a variety of risk issues. Lee's detailed empirical research used 10-year yield histories of 55 individual citrus growers to calculate probabilities of yield loss, then applied them to a hypothetical insurance scenario and estimated the payoff.

She examined the probabilities of various levels of yield loss compared to the average (normal) yield. Given that individual yields can range from zero (crop is wiped out) to 90% above average, an individual's realization was found to be almost evenly distributed above and below the individual average.

As in agriculture generally, unpredictable yield losses in horticultural crops—from frost damage, for example—often affect many growers of the region simultaneously, resulting in correlated yield losses. However, yield losses can be offset, at least partially, by a higher market price. In estimating the payoff to crop insurance for an individual grower, it is important to recognize the linkage between the individual yield and market price. This relationship can be evaluated in a two-step procedure, first the link between

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the individual yield and average yield, and second the link between the average yield and market price.

Lee statistically estimated these relationships for citrus. She found that on average, about 30% of an individual farmer's variation in yield is shared by all farms in the region, and 70% is unique to that farmer. Regarding the market price effect, a fall in market quantity of citrus by 10% historically raises the market price by 6%.

Incorporating these findings in an insurance payoff model, Lee examined the payoff to yield guarantee insurance (federal multi-peril crop insurance) at various guarantee levels that can be chosen by the farmer. As expected, the higher guarantee level increases the expected indemnity payment, which ranges from 3.4% to 14% of normal crop value for guarantee levels between 60% and 90%. These specific results apply to citrus but the approach provides insights for many crops.

Corinne Alexander and Nick Kuminoff, graduate students at UC Davis, examined the possibilities of increasing NAP coverage levels or extending whole-farm revenue insurance to fresh market broccoli growers.

They presented preliminary results in a briefing for USDA Risk Management Agency representatives, basing their statistical analysis on 1984-98 county-level yields for Monterey, Santa Barbara, San Luis Obispo and Imperial counties. For NAP yield insurance they found that the probability of existing yield triggers being met is quite low—less than 1% for each county.

Alexander and Kuminoff also considered the implications of offering " whole farm" revenue insurance to Monterey's broccoli growers. This type of insurance is available under a pilot program in other states, but is not currently offered in California. It insures growers who are diversified across multiple crops, based on their total farm revenue. Most broccoli growers are diversified across vegetable crops, getting about a quarter of their total revenue from broccoli. The researchers found that at program levels existing in other states, the probability of California broccoli growers receiving a payoff was about 1% or less.

Alexander and Kuminoff concluded that the difficulty in indemnifying broccoli growers with existing programs was partly due to a "natural hedge" in the broccoli market, in which lower yields result in higher prices—as Lee also found for citrus.

December Date for Executive Seminar

New trends and developments in food marketing in the new dot.com world will be the theme of this year's annual Executive Seminar, co-sponsored by the UC's Agricultural Issues Center and Center for Cooperatives. The seminar will be held on Monday, December 4, in Sacramento.

The day-long seminar will begin with an outlook for economic trends and major issues facing the food and fiber system, then turn to an in-depth discussion of the technological and economic implications of the dot.com revolution for world markets, California farmers and agricultural supply firms and marketers. We are lining up a first-rate set of industry and academic experts for this event.

Details of the program will be announced later. Meanwhile, save the date.

Symposium Reports on Effects of Dairy Trade Liberalization

Less restrictive international trade policies in the highly-regulated dairy industries of the world would shift benefits between groups of producers and consumers, but probably would have smaller overall gains if regulations remain in place within the major trading nations.

Domestic subsidies and trade policies for the international dairy industry were the focus of a research symposium organized by the AIC and the Center for Agricultural and Rural Development (CARD) at Iowa State University last October. The resulting 15 research papers have been published in a recent special issue of the *Canadian Journal of Agricultural Economics*.

A new round of trade negotiations under the World Trade Organization is under way. Dairy trade policy will be a central topic in those negotiations. Dairy is one of the world's largest agricultural industries and is also heavily government-supported and regulated. Trade, production and consumption of dairy products are still highly distorted in most countries, as the special issue's introduction points out.

Authors of the introductory chapter are John C. Beghin, director of international studies for CARD and professor of economics at Iowa State, and Daniel A. Sumner, UCD agricultural economist and director of the AIC.

The research papers deal with trade policies in the U.S., Canada, the European Union, Korea and Australia, and with the potential effects of multilateral reforms. Among the findings are these:

- In the U.S., dairy support prices have been phased down, but marketing order pricing within the U.S. market remains an important policy tool that occurs behind a tariff rate quota that limits imports to a small percentage of domestic consumption.

- In Canada, imports are subject to very high tariff barriers that have allowed less than 10% of domestic consumption to be imported. Opening this market would reduce dairy quota value but perhaps not increase trade by much.
- Agricultural policy reform in the European Union would provide economic gains to consumers, as dairy prices would decrease significantly. Producers would lose almost as much as consumers gain. If the Czech Republic, Hungary and Poland join the EU (with no global liberalization), their consumers would face much higher prices and their producers would benefit for the same reason.

- Two groups of "winners" following world dairy trade liberalization would be producers in New Zealand and Australia and consumers in the currently-protected markets of Japan, Korea, Europe and Canada.

The research papers, Beghin and Sumner report in their introduction, indicate that dairy trade liberalization under the WTO to date has had moderate effects on world markets and that further liberalization would probably provide short-term gains "that are large in absolute value, but only a small share of the value of dairy production." This is because of the small price responsiveness of supply and demand in many dairy markets, and because of domestic quota restraints.

Detailed information is available through a link at the AIC website.

Ag Labor Relations Are Conference Theme

Farm labor laws in California were the theme of the third annual Agricultural Labor and Employment Summit at the Harris Ranch Restaurant in Coalinga in early May. The UC Agricultural Personnel Management Program co-sponsored the conference, which drew 95 farmers, farm labor contractors, regulators, educators and others. A series of speakers provided information and updates.

George Daniels of Farm Employers Labor Service reported that the Social Security Administration continues to send letters to employers who report over 50% of their W-2s with social security numbers and names that do not match the SSA's records. There is presently a virtual "firewall" between the SSA and the Immigration and Naturalization Service. The SSA does not inform the INS that particular employers may have unauthorized workers. Although employers are advised to communicate with affected employees, these SSA "mismatches" should not be used as a pretext for adverse action against an employee.

Attorneys Michael Saqui and Mark Hanna of the law firm Barsamian, Saqui and Moody reviewed legislative and regulatory changes of the past year. Changes involve employer access to medical records of employees with compensation claims, modifications in rules related to wage payments and overtime, increases in Cal/OSHA penalties, age discrimination, changes in the Fair Employment and Housing Act, California civil rights amendments, employee leave policies, definition of disability, and sexual harassment guidelines issued by the Equal Employment Opportunities Commission.

Julio Alaniz of the California Highway Patrol explained the state's definition of a farm labor vehicle, and the new seat belt and inspection requirements that affect these vehicles and their drivers. If a van can carry nine or more farm worker passengers, it must be inspected and certified by the CHP.

Gil Molina of the U.S. Wage and Hour Division affirmed his agency's requirement that transporters of farm workers be registered and adequately insured. Agricultural employers (growers and contractors) can be held jointly responsible for their foremens' actions related to worker transportation, including deductions from workers' earnings for transportation.

A New Portrait of State's Agriculture

A revised, updated and expanded version of the Center's most popular publication, "The Measure of California Agriculture," is in the final stages of editing and will be available soon. In line with the new era that it reflects, its title is "The Measure of California Agriculture, 2000" and the entire document with additional related material will be available on the internet.

With text, graphs and charts and detailed statistics, the new publication provides a portrait of California agriculture that reviews demographics of farms and farmers; inputs to farm production; production trends and demand and supply; trends in marketing, trade, policy and risk management; and agriculture's role in the California economy.

The authors are Nicolai V. Kuminoff, AIC researcher, and Daniel A. Sumner, Center director, with George Goldman, Cooperative Extension Economist at Berkeley.

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Reports From the 1991-94 Water Study

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